Website Creation and Management at CERN

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CERN's web presence

Internal and external audience

(day-to-day operations, press releases, announcements, collaboration, etc.)
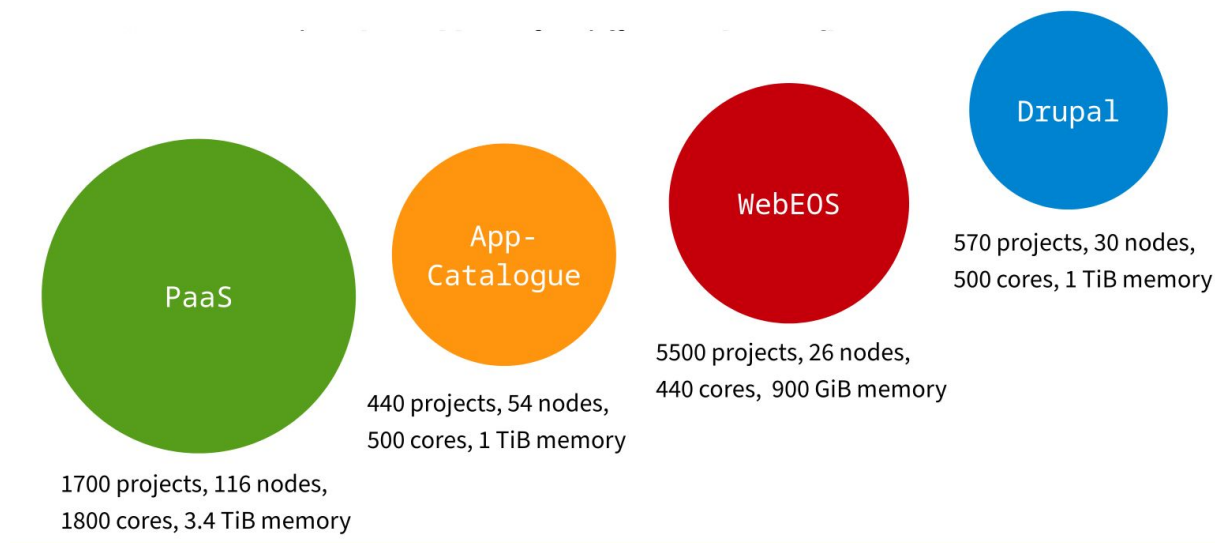
Different owners and users

(each website has unique requirements, audience(s), experience, traffic, and resources)

How do we manage it?

Centralised infrastructure
(run latest versions, apply
security patches)

Standardised configuration
(provisioning, backups, service
integrations, authentication, etc.)

Drupal

570 projects, 30 nodes,
500 cores, 1 TiB memory

WebEOS

5500 projects, 26 nodes,
440 cores, 900 GiB memory

App-
Catalogue

440 projects, 54 nodes,
500 cores, 1 TiB memory

PaaS

1700 projects, 116 nodes,
1800 cores, 3.4 TiB memory

Web Services Portal

Streamlines access to services to create and manage web applications

Use services provided by the IT infrastructure.

Web Content Management

Create fully-fledged projects and organizational sites with content management and WSIWG editor.

Documentation

Create structured documentation for a service, build your project's knowledge base, work on publications.

Communication

Allow your community to discuss specific topics and get their answers quickly. Prepare surveys, send newsletters and alerts.

Web Application & Site Hosting

Expose your self-made website and share content with others.

Software development

Get support for the whole software lifecycle: issue tracking, version control, continuous integration and deployment, repository management, and others.

Monitoring Solutions

Add analytics to your website, get insight into your application performance and identify operational problems with no hassle.

Monitoring Solutions

Sentry

● **Real-time application monitoring and issue identification**

Grafana

● **Interactive dashboards for data visualization and analytics**
● **Ideal for monitoring application performance**

Matomo

● **Web analytics for detailed insights into website performance**
● **Supports GDPR compliance and data privacy**

Web Content Management

Drupal and WordPress

- **Create organizational sites using defined project templates**
- **Ideal for teams needing structured content management solutions**

Sharepoint Online

- **Projects needing more advanced features for content sharing, collaboration, document management and workflows**
- **GDPR compliance**

Documentation Tools

GitLab Pages (MkDocs)

- **Documentation generator for software teams**
- **Recommended for publishing software documentation**

CodiMD - Online Text Editor

- **Collaborative note taking in real time**
- **Meeting minutes and drafts of documentation**

Confluence

- **Content collaboration and management workspace**
- **Ideal for teams needing a shared knowledge environment**

Software Development Tools

GitLab

- **Source code control, versioning, and continuous integration**

Jira

- **Issue tracking and bug management**
- **Ideal for project teams managing complex workflows**

Communication Tools

Discourse

- **Forum platform for community discussions and problem-solving**
- **Recommended for communities to exchange solutions**

Microsoft Forms

- **Lightweight survey tool for quick feedback collection**

Advanced Software Development Tools

Nexus

- **Artifact repository manager for binaries and build artifacts**
- **Essential for managing software dependencies**

Jenkins

- **Advanced continuous integration workflows**
- **Recommended for teams with complex CI/CD needs**
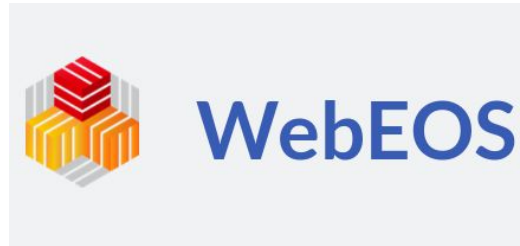
Web Content Management

Web Application & Site Hosting

Monitoring

Website Hosting

Using WebEOS

WebEOS

Host lightweight official and personal websites using EOS

Ideal for publishing static content and simple dynamic content online

Workflow
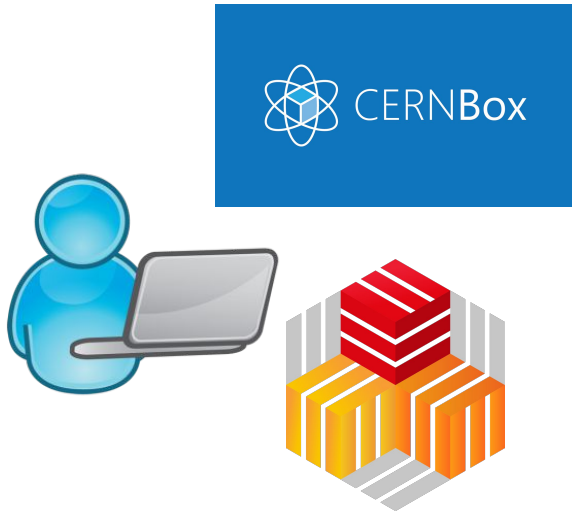
Store site content on EOS	Create site on Web Services Portal	Configure site and define Access Control

Store your static code and site content on EOS

- **How do I access EOS?**
  - Lxplus
  - CERNBox
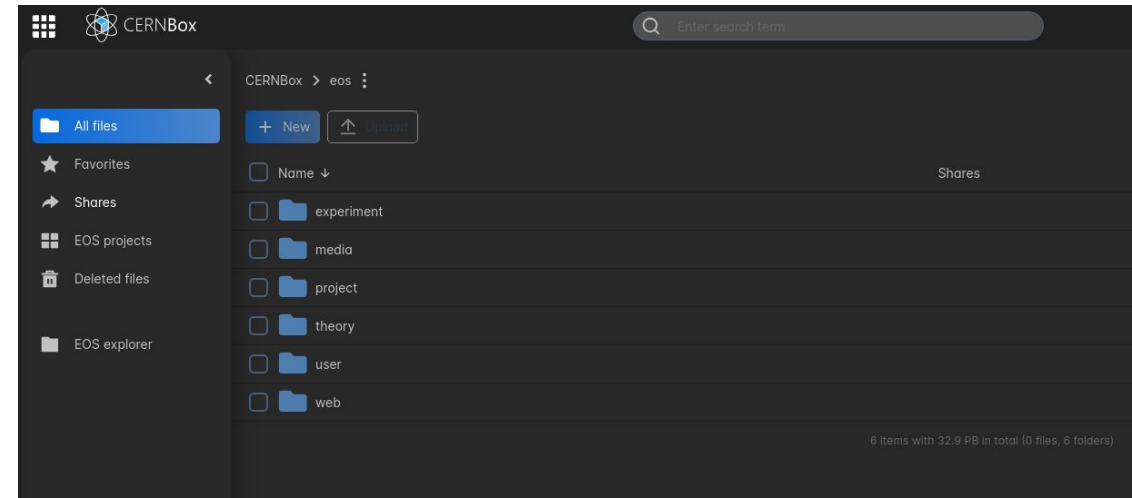

```
Filesystem         Size  Used Avail Use% Mounted on
/dev/mapper/Vol...  83G   47G   32G  60% /
tmpfs              16G  2.5M   16G   1% /dev/shm
/dev/vda1         398M  107M  271M  29% /boot
/dev/vdb          159G  111G   40G  74% /tmp
/dev/vdb          159G  111G   40G  74% /var/tmp
AFS               9.3G     0  9.3G   0% /afs
sssd              315M   56M  259M  18% /var/lib/sss/db
eosuser           973T  589T  385T  61% /eos/user
cvmfs2             32G   22G  9.9G  69% /cvmfs/atlas.cern.ch
cvmfs2             32G   22G  9.9G  69% /cvmfs/cms.cern.ch
cvmfs2             32G   22G  9.9G  69% /cvmfs/sft.cern.ch
cvmfs2             32G   22G  9.9G  69% /cvmfs/cvmfs-config.cern.ch
```

Store your website code and content on EOS

EOS Instances

- Official sites: EOSPROJECT or dedicated experiment instances (ATLAS, ALICE, CMS, LHCb)
- Personal and Test sites: EOSUSER instance

Defining the EOS Path

Typical paths:
- /eos/project/<initial>/<projectname>/www for official projects
- /eos/user/<initial>/username/www for personal websites
- Path must lead to the directory containing the index.html

Granting Access to Web Servers

- **Share EOS folder with account wwweos**
  - Through CERNBox as Viewer
  - Use EOS CLI on lxplus
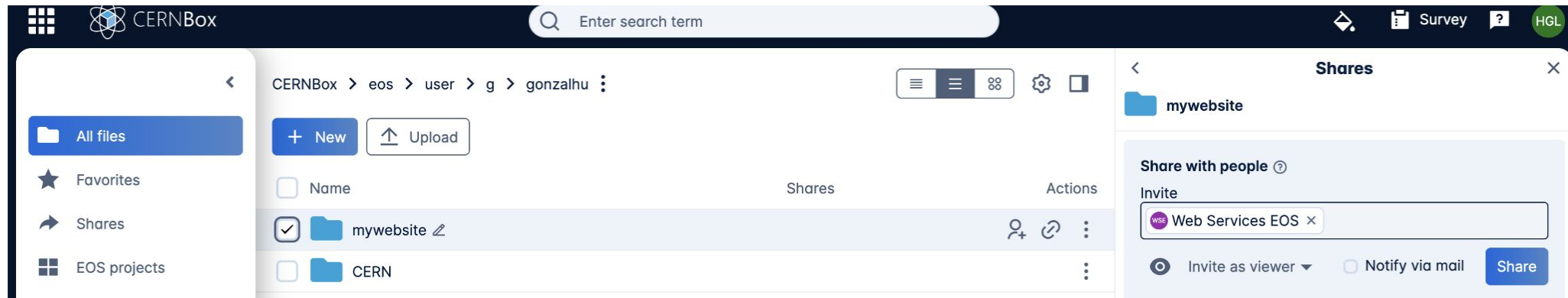
Create your site
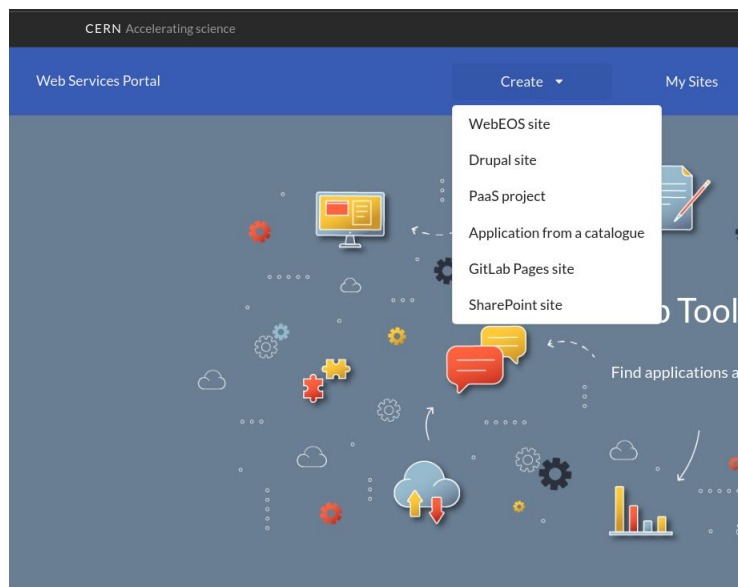
Creating a WebEOS site

You're minutes away from getting your site up and running.

1. WebEOS sites have their content stored on EOS. Share the EOS location of your choice with user `a:wwweos` via the cernbox web interface.
See how: for personal sites ⧉ , for project sites ⧉

2. Create `index.html` file in the EOS location. See example

3. Fill in the form below and let us do the magic

Our recommendations for choosing a site name and category ⧉

Official - reassigned when owner leaves ▼

Site name	.web.cern.ch ▼

Administrator group for the site, e.g. my-group 🔍

Setting administrator group for Official sites is strongly recommended. If you do not set an admin group now, please make sure to set it at the earliest opportunity.

Site description

Path to site content on EOS folder, e.g. /eos/project/www

Category* | Test - deleted 6 months after creation ▼

Official - reassigned when owner leaves

Personal - deleted when owner leaves

Test - deleted 6 months after creation

Description*

Define
- Site category
- Site URL
- Admin group

Configure your site

Access Control

Application Portal

- **Site-level access control**
- **Configured entirely through UI**

.htaccess files

- **Directory level access control**
- **Configured using htaccess directives**

Global access settings

Roles

Roles

Role settings

Assign e-groups to roles

.htaccess for Access Control

- **Granular access control**
- **Default state: .htaccess files not processed**

Using .htaccess

- Directory-level access control

- Enabling/disabling authentication per directory

```
AuthType openid-connect
Require claim cern_roles:<role_identifier>
```

Access scenarios

```
AuthType None
Require all granted
```

- ● Site accessible to unauthenticated users
- ● Site accessible to specific groups
- ● Root accessible to unauthenticated users, directories protected
- ● Intranet visibility

- - Combine directives with "Require All" and "Require Any"

Monitoring

Web Analytics
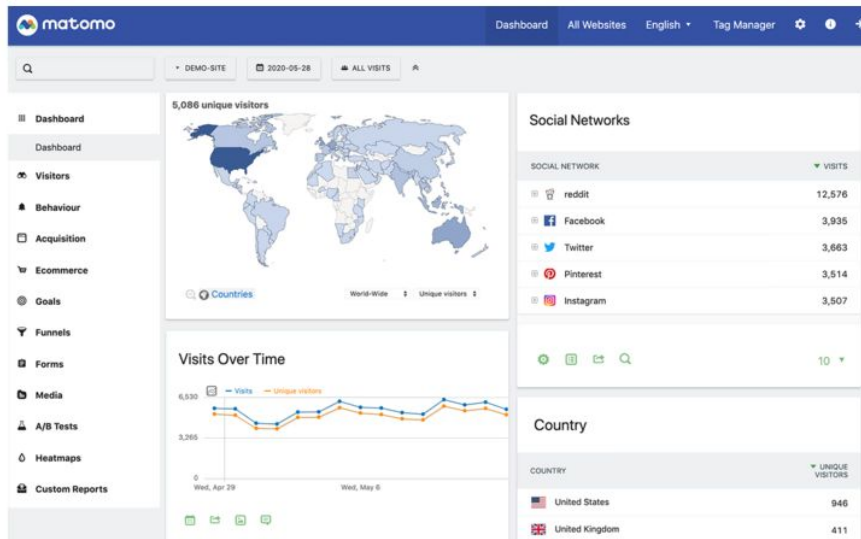
- **Detailed reports on website and visitor behavior**

- **GDPR compliance and user opt-out options**

- **Anonymization of tracked data**

Using Matomo for your site

Add site to Matomo

Implement Tracking Code

View Web Analytics
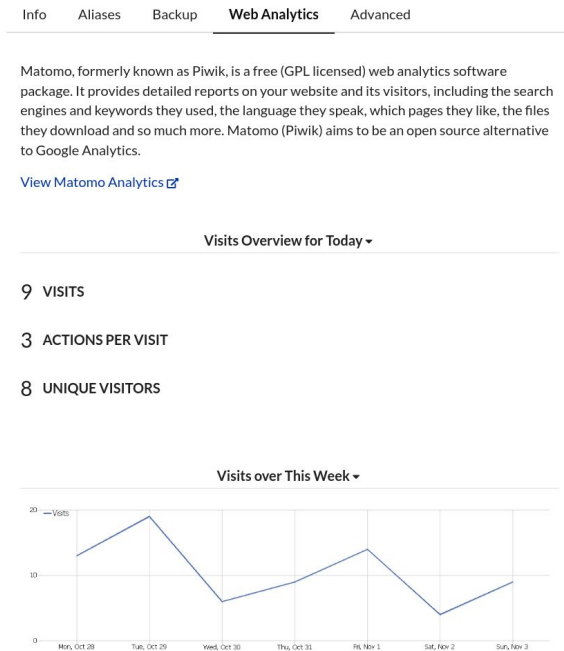
Web Services Portal

Basic Statistics
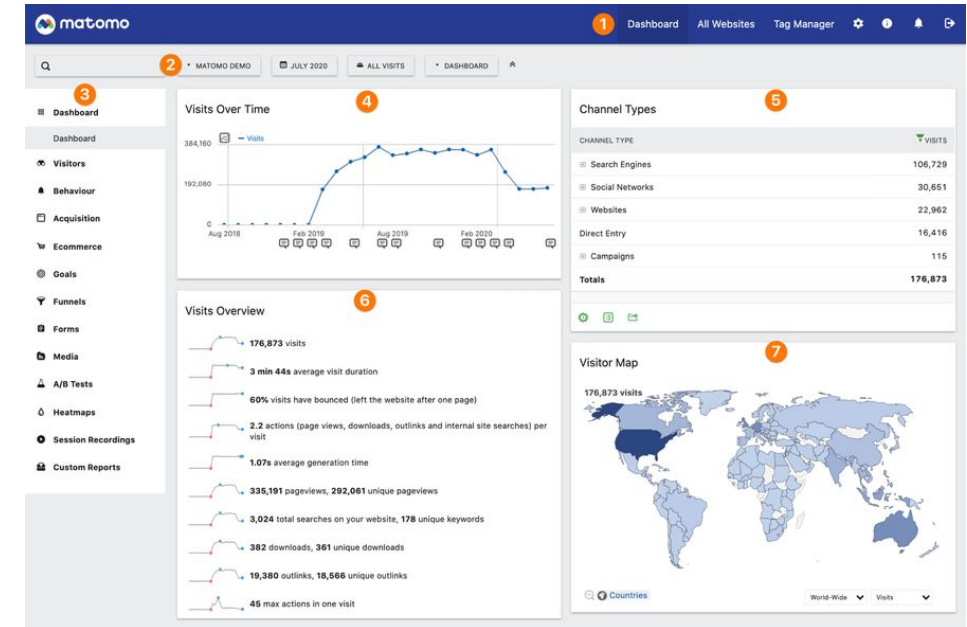
Web Analytics Page

Advanced Usage

Web Content Management
Drupal, Wordpress

Dynamic content management at CERN

Support for complex websites and user interactions

Open source and community support

Workflow

Create Site
Web Services Portal
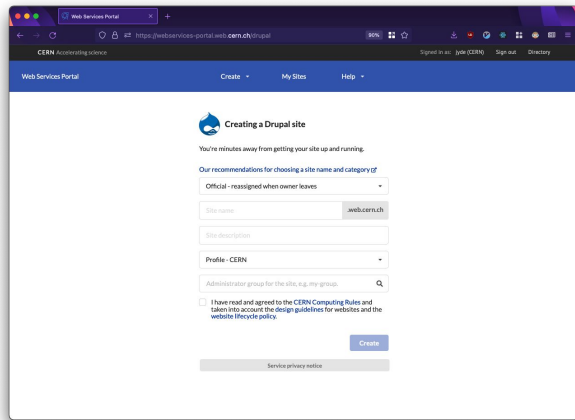
Create Content
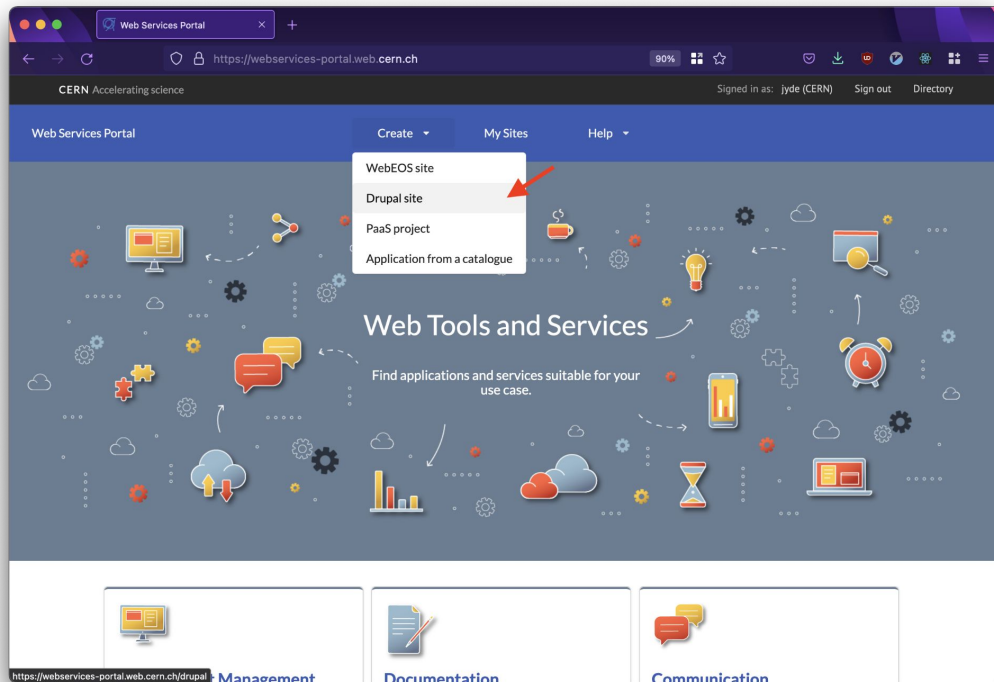**WYSIWYG Editor**
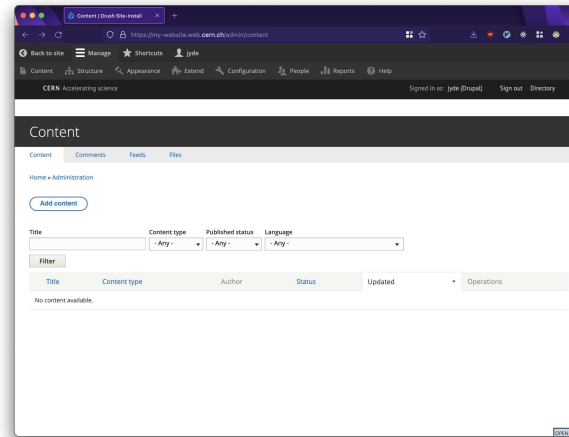
Manage Access
Application Portal
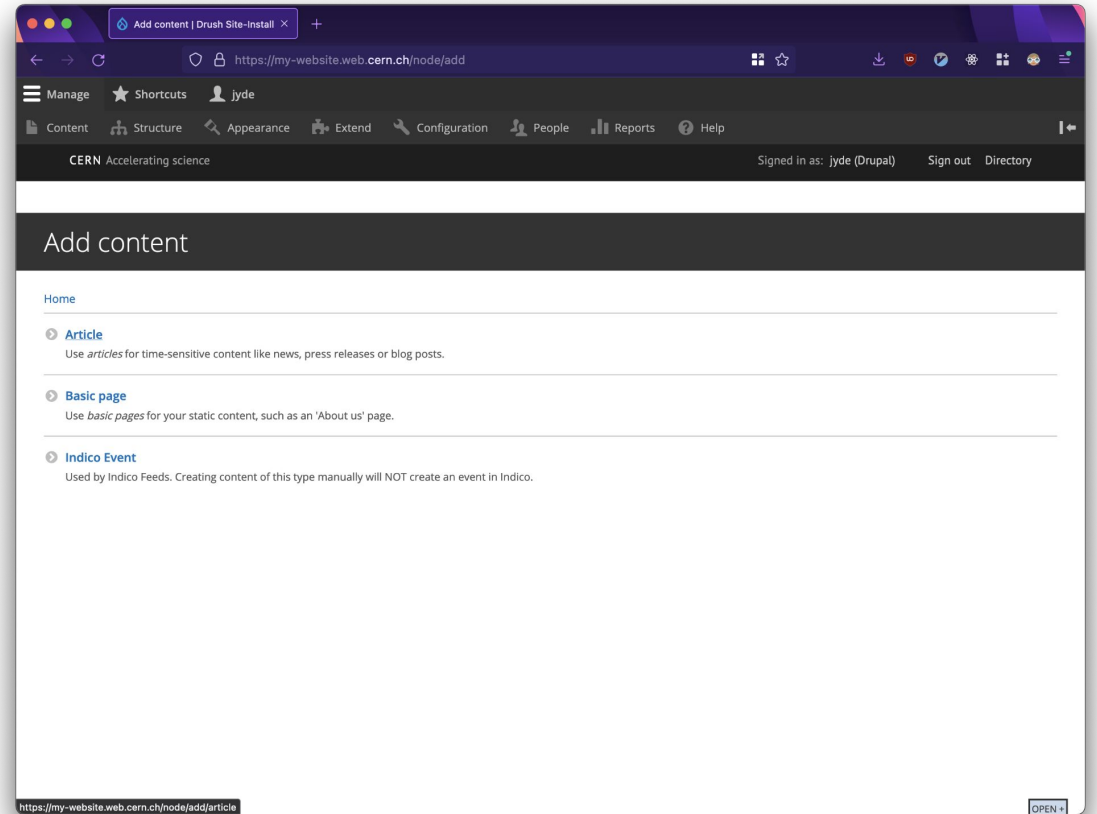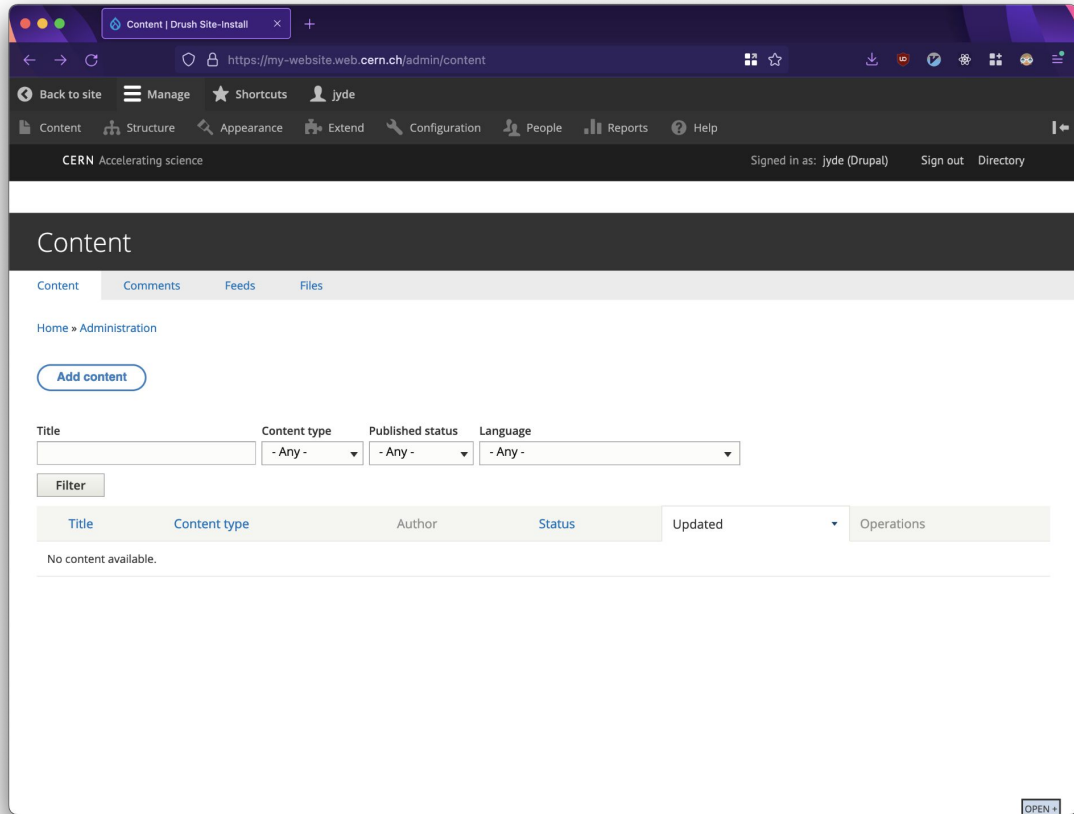
Create site

Configure

Create content

Manage Roles

Application: Web frameworks My Website (drupal)

Application details   SSO Registration   **Roles**   Group memberships
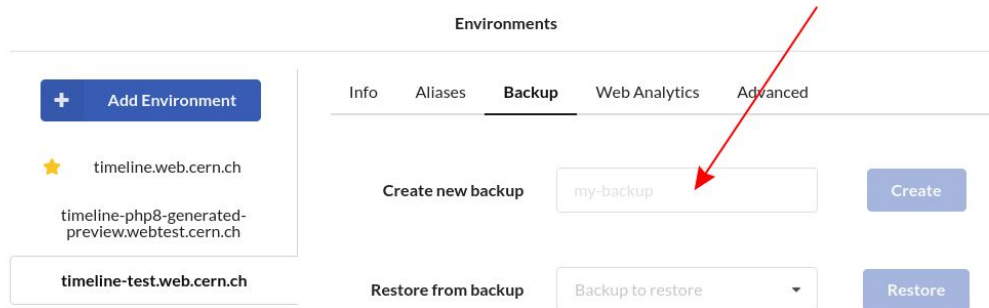
Name	Role Identifier	Description	Required?	Multifactor?	Apply to all users?	
administrator	administrator	Migrated role from SimpleSAML				✏️ 🗑️ 👥
CERN Registered	cern_registered	CERN primary accounts			✔️	✏️ 🗑️
CERN Shared	cern_shared	CERN service accounts			✔️	✏️ 🗑️
HEP Trusted	hep_trusted	Role for HEP Trusted Users			✔️	✏️ 🗑️
Verified External	verified_external	Role for Verifed External Users			✔️	✏️ 🗑️
Unverified External	unverified_external	Role for Unverified External Users			✔️	✏️ 🗑️

+ Add Role

Additional functionalities

- Automated backups

- On demand backups and restores via the Web Services Portal

- Cloning for testing and development

A note on Wordpress

- Transition from Drupal to WordPress underway

- Limited customization to ensure uniformity

- Currently requires opening a ticket for new instances

- Integration with CERN's authentication system

Identifying your use case

Identifying your use case
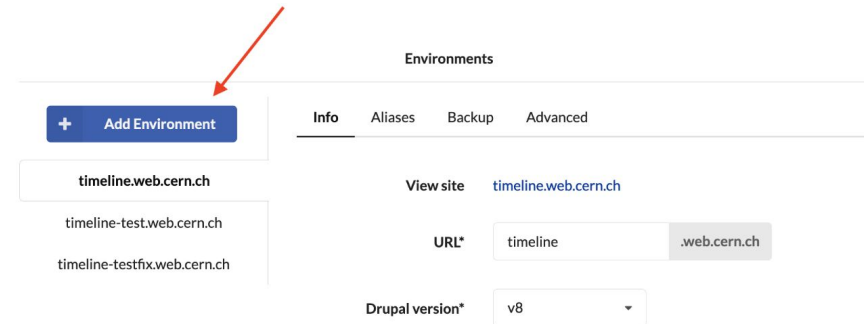

Dynamic Content Management

- Use Drupal or WordPress to manage dynamic content efficiently. These platforms offer:
- - Easy content creation and editing with WYSIWYG editors.
- - Categorization and tagging for better content organization.
- - API integration
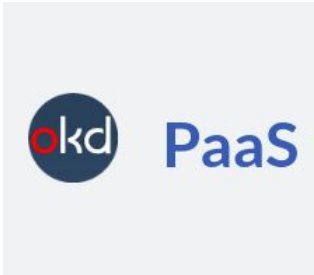
Simple Content Hosting

- WebEOS is ideal for simple content hosting:
- - Store content on EOS and manage it via CERNBox.
- - Serve HTML, CSS, and JavaScript files efficiently.
- - Ensure content is accessible with minimal maintenance.

Try it yourself

GitLab Pages

Grafana

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Find applications and services suitable for your use case.

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Monitoring Solutions
Add analytics to your website, get insight into your application performance and identify operational problems with no hassle.

Confluence

SharePoint

okd PaaS

Jira

SENTRY

Discourse

Thank You!

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